

# CABENCH-TO-BEDSIDE v2.1

## *Installation Guide*

### Document Revision History

Date	Version	Description
6 July 2007	1.0	Draft document
6 September 2007	1.0	Reviewed and verified
9 June 2008	2.0	Draft document
18 July 2008	2.0	Reviewed and verified
4 December 2008	2.1	Reviewed and verified
23 December 2008	2.1	Reviewed by Documentation and Training workspace



**caBIG™** cancer Biomedical  
Informatics Grid™

an initiative of the National Cancer Institute

This is a U.S. Government work.

December 24, 2008

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# Chapter 1 Introduction

This document describes the process to install caB2B client and server.

The **caB2B client** is a desktop application which enables user to perform the following actions:

1. Query for data from disparate data sources over the caGrid
2. Select interesting data from the query results and add it to an Experiment
3. Analyze and visualize data using analytical services available over the caGrid

The **caB2B server** caters to multiple caB2B clients and connects to the caGrid to utilize the caGrid resources. It also communicates with the local MySQL database which stores the metadata for different data services and Experiment related data.

To use the caB2B application consists of caB2B administrative module and caB2B client module. Refer to the caB2B end user manual to learn to how to use the client module, and for configuring the client module refer to admin user manual and admin installation guide.

To install the caB2B client and server the user should have intermediate knowledge of computers and basic knowledge of shell commands.

## Chapter 2 Client Installation

You can install caB2B client either using the client installation Zip file or using the caB2B client URL (Java Web Start URL).

It is recommended that you use the Java Web Start URL instead of directly installing caB2B using the installation zip. Use of the Java Web Start technology will ensure that you receive latest updates for caB2B automatically without having to manually upgrade the software.

### Prerequisites

1. JRE version 1.6\_03 (or above) should be installed and used by default.
2. Valid grid user account

### How to install caB2B client using Java Web Start?

1. Use this option if you are going to connect to the caB2B server deployed at Washington University in St. Louis.
2. Go to caB2B Web Start link <http://cab2b.wustl.edu/> and click on image above "Client Installer (Java Web Start)" to install.
3. You may see security warning window indicating *"The application's digital signature is invalid. Do you want to run the application?"* The reason for this warning is that cab2b-jars are signed with self generated certificates and not from any security authorities. Select run to continue to the application.

### How to run caB2B client using installation zip file?

1. Use this if you have grid account on a grid other than production or test grid. Or if you simply do not wish to use webstart. You can download the zip file from <http://cab2b.wustl.edu/>
2. Unzip cab2bClientSetup.zip in to a folder, say C:/cab2b/ (here after referred as <client\_home>).
3. Configure the properties file <client\_home>/conf/cab2b.properties
  - By default the properties are configured to connect to the caB2B Server at Washington University in St. Louis.
  - Set the parameters caB2B.server.ip, caB2B.server.port to configure caB2B server you want to connect. For example, if you want to connect to server running at cab2b.wustl.edu and its JNDI service port is 1099 entries in property file should be

```
caB2B.server.ip=cab2b.wustl.edu
caB2B.server.port=1099
```
  - By default the properties are configured for users with account on training grid and/or production grid. If you have account on any other grid, add your

grid name under “Idps” property to comma separated names without any spaces. Also create one property in the same file with the name “<name of your grid>.dorian.url” and add the dorian url for that grid as a value to that property.

For example, if you have your account on “Test” grid, two properties will look like:

```
IdPs=Training,Production,Test
```

```
Test.dorian.url=https://testurl/wsrf/services/caGrid/Dorian
```

4. To launch the caB2B client:
  - From Windows machines, double click on <client\_home>\run.bat
  - From Linux machines, execute <client\_home>\run.sh

This file is not executable by default. Add appropriate privileges to this file using “*chmod*” command.

  - For any other OS, use the command `java -Xmx512m -jar cab2bClient.jar`
5. The log files can be located in the folder <client\_home>\log\, say C:\cab2b\log\

## Chapter 3 Server Installation

### Prerequisites

- JDK 1.6.03
- JBoss 4.0.5.GA
- MySQL 4.1.10
- Ant 1.6.x
- Globus certificates for the same saved in USER\_HOME directory (if you wish to host the server locally).

Note: JBoss ant ANT installation should not contain spaces in their paths

### How to install caB2B server?

#### Verify required tools

Verify Java and Ant is installed on your machine. Refer to sections [Verify java installation](#) and [Verify ant installation](#). Verify that the MySQL database server is up and running.

Unzip **cab2bInstaller.zip** in to a folder, say C:/cab2b/ (here after referred as <home\_dir>).

#### Configuring JBoss

1. Add following line to run.bat for console log

```
set JAVA_OPTS=-
```

```
Dorg.jboss.logging.Log4jService.catchSystemOut=false %JAVA_OPTS%
```

Note: This is for Windows. Make suitable change for Linux in run.sh

2. Add following line to run.bat for remote debug

```
set JAVA_OPTS=-Xdebug -
```

```
Xrunjdwp:transport=dt_socket,address=8787,server=y,suspend=n
```

```
%JAVA_OPTS%
```

Note: This is for Windows. Make suitable change for Linux in run.sh

3. Edit web.xml for java 1.5 support in JSP. It is located at jboss-4.0.5.GA/server/default/deploy/jbossweb-tomcat55.sar/conf/web.xml  
Following tag is commented by default. You need to uncomment it.

```
<init-param>
    <param-name>compilerSourceVM</param-name>
    <param-value>1.5</param-value>
</init-param>
```

4. Edit server/default/deploy/ear-deployer.xml, and set CallByValue as true
5. Edit server/default/conf/jboss-service.xml and make CallByValue as 'true' in NamingService tag
6. Set your JBOSS\_HOME= your jboss server

## Configuring <home\_dir>/conf/server.properties

jboss.home	Set this to the directory where JBoss is installed. For example, jboss.home=D:/jboss-4.0.4.GA/
database.server.ip	IP address of the machine on which the MySQL database is installed For example, database.server.ip=22.44.55.66
database.server.port	Port on which the MySQL database is deployed For example, database.server.port=3306
database.name	Name of the MySQL database For example, database.name=cab2bDatabase  <b>Note:</b> During the installation process this database will be created if it does not exist. If it is an existing database, then the install process will recreate the database.
database.username	User name to connect to the caB2B database.  <b>Note:</b> This user must have delete and drop permissions in the caB2B database.
database.password	Password for the caB2B database user.

## Loading metadata for models

To support any data service, you have to load its metadata into the caB2B server's database. You can achieve this using caB2B Admin module. Please refer to caB2B Admin user guide for detailed information.

This installer also offers you an option of installing a pre-populated database. This database comes with metadata for fifteen models. These models are

- caTissue Core v1.2
- NCIA V3, caArray v2.1
- caArray v2.0
- caBIO v4.0
- Grid-Enablement of Protein Information Resource (PIR) v1.2
- caIntegrator v2.1
- caFE Server v1.1
- caNanoLab v1.4
- Behavioral Research Measures v1
- HINTSSurvey v1

- TobaccoTax v1
- Tobacco Informatics Grid v1
- CGWB v1
- LabKey CPAS Client API v2.1
- GeneConnect v1

### To install pre-populated database

1. Download latest database dump(MetadataDbDump.zip) from Gforge under caB2B V2.1 Release.
2. Run the command

```
mysql -u username -ppassword database_name < dump.sql
```

### Run command “ant install.server”

1. Copy junit-3.8.1.jar from <home\_dir>/lib/junitTest to ANT\_HOME/lib
2. Open command prompt and go to directory <home\_dir>/build
3. Run command “ant install.server”
4. This will invoke Ant target to install caB2B server. This takes several minutes depending on the configurations. During the process, following steps are executed
  - a. Create database: You may see some SQL errors if you are installing it for the first time. Ignore those.
  - b. Deploying caB2B application in Jboss.

### Start JBoss Application Server

- We recommend 1GB memory for cab2b-server. This can be done by setting - **Xms512m -Xmx1024m** java options in run.bat / run.sh
- If your application server is running behind the firewall, you need to modify run.bat / run.sh to provide proxy authentication. This can be done by setting following java options

**-Dhttp.proxyHost=your.proxy.host**

**-Dhttp.proxyPort=your.proxy.port**

**-Dhttp.nonProxyHosts=list of local IPs**

**-Dhttp.proxyUser=proxy.user.name**

**-Dhttp.proxyPassword=password**

For public machines these settings are not needed.

- Once the “ant install.server” command is successfully executed, start the Jboss by using the <Jboss\_home>/bin/run.bat.



## To setup caB2B Web Start link specific to a caB2B Server

If you deploy your own cab2b-server, you can also setup the distribution of the caB2B client via Web Start.

### How to create war file for web start installation?

1. Download latest **cab2bInstaller.zip** from G-Forge. Suppose `<home_dir>` represents root directory of caB2B installer code. That is it will have directories like "build", "conf" inside it.
2. Edit `<home_dir>/webstart/webstart.properties` to specify the host IP and port of your web server. E.g. if your web server is on machine cab2b.wustl.edu running at port 8080, property file entries will look like

*webstart.server.host= cab2b.wustl.edu*

*webstart.server.port=8080*

3. Configure the `<user.home>/conf/cab2b.properties` as mentioned in section [How to run caB2B client using installation zip file?](#)

`<user.home>` is the directory specified by Java's "user.home" system property. On Windows 2000 and XP, the "user.home" directory in most cases corresponds to the environment variable %USERPROFILE%, e.g. "C:\Documents and Settings\User".

On Unix/Linux systems, the "user.home" directory in most cases correspond to the \$HOME environment variable (e.g. "/home/username").

4. In command line, go to the `<source>/build` directory and run command

*ant build.client.webstart.war*. This will create `<source_dir>/workarea/cab2b.war` file.

5. Deploy this war file into your web server.  
For Jboss, put the file into `<JBoss_home>/server/default/deploy/`.  
For Tomcat, put the file into `<tomcat_home>/webapps/`.  
For other web servers please go through its application deployment guide.

6. Start the server

7. Now you can install caB2B client from

<http://<webserver-host-ip>:<webserver-port>/>

For Example, <http://cab2b.wustl.edu:8080/>

## Chapter 4 Appendix

### Verify ant installation

Make sure that you have Apache-ant-1.6.x and its “bin” directory is in PATH. To verify it run command **ant** from any directory and it should not report it as invalid command. If you don't have ANT, it can be downloaded from <http://archive.apache.org/dist/ant/binaries/>.

Also, make sure that ANT\_HOME\lib directory contains junit jar file. If this file is not present, executing a target will give you error “**taskdef A class needed by class org.apache.cactus.integration.ant.CactusTask cannot be found: junit/framework/Test**”

### Verify java installation

You need to have java 1.6.03 on your system. To check java, run command **java –version** from any directory and it response should be like *java version "1.6.0\_03"...* JDK-JRE can be downloaded from <http://java.sun.com/>

## Chapter 5 References

Java- version 1.6.03

[https://cds.sun.com/is-bin/INTERSHOP.enfinity/WFS/CDS-CDS\\_Developer-Site/en\\_US/-/USD/ViewProductDetail-Start?ProductRef=jdk-6u3-oth-JPR@CDS-CDS\\_Developer](https://cds.sun.com/is-bin/INTERSHOP.enfinity/WFS/CDS-CDS_Developer-Site/en_US/-/USD/ViewProductDetail-Start?ProductRef=jdk-6u3-oth-JPR@CDS-CDS_Developer)

caB2B G-Forge link

<https://gforge.nci.nih.gov/projects/cab2b/>

caB2B Java Web Start link

<http://cab2b.wustl.edu/>

JBoss

[http://sourceforge.net/project/showfiles.php?group\\_id=22866&package\\_id=16942&release\\_id=416591](http://sourceforge.net/project/showfiles.php?group_id=22866&package_id=16942&release_id=416591)

MySQL download

<http://dev.mysql.com/downloads/mysql/4.1.html>

Ant 1.6.x

<http://ant.apache.org/antnews.html>

caGrid Security

<http://www.cagrid.org/wiki/GAARDS:Main>